

Practices, experiences and opinions of snake catchers and their clients in southern Australia

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Abstract

The occurrence of snakes on private properties concerns many residents. Translocation of snakes by licensed snake catchers from private properties to public land is a common management practice in many urbanised areas in Australia. However, little is known about the practices of the snake catchers and the effectiveness of this management in terms of solving human-snake conflict. Mail questionnaires were used to survey licensed snake catchers from South Australia, and South Australian and Victorian residents who have used snake catchers. Catchers received calls from spring to autumn. The most frequently relocated snakes in South Australia were Brown Snakes *Pseudonaja* spp. Catchers chose release sites based on permit stipulations, perceived suitability of habitat, and likelihood of repeat encounters with humans. Residents detailed various beliefs for the occurrence of snakes on their property, including prey and shelter availability, and proximity to 'snake habitat', and, after first having a snake removed from their property, most found snakes subsequently. These repeat encounters suggest that education regarding snake encounters and discouraging snakes from entering/staying on their properties should be provided to residents, and that alternative management strategies for snakes in urban areas should be investigated. (*The Victorian Naturalist* 123 (6), 2006, 383-389)

Introduction

Human-snake conflict is common wherever both are abundant (Sealy 1997, Nowak 1998, Whitaker and Shine 1999, Fearn *et al.* 2001, Shine and Koenig 2001, Clemann *et al.* 2004). This conflict is heightened where highly venomous snakes occur. A recent survey of residents in urban areas of New South Wales showed that, of all animals likely to be encountered in suburbia, snakes were the least desired around people's homes (Davies *et al.* 2004). The most abundant and frequently-encountered snakes in south-eastern Australia are large, highly venomous members of the family Elapidae. Several of these are common in both urban and rural areas, and frequently come into contact with humans (Clemann *et al.* 2004). Although direct persecution of snakes remains common (Whitaker and Shine 2000), relocation of 'nuisance' snakes is often the government-sanctioned approach to managing this issue (Clemann *et al.* 2004).

Human-snake conflict involves two key issues – human dimensions and biological/ecological factors. The human dimensions issue involves the opinions, biases, motivations, knowledge and behaviours of people and organisations involved in this conflict. The biological/ecological factors involved

in snake translocation include the effects of capture and relocation on individual snakes, and impacts on conspecifics and other taxa at both the 'donor' and release sites. Both issues have been largely neglected. Most studies of snakes relocated to solve human-snake conflict have involved viperid taxa in North America (e.g. Sealy 1997, Nowack 1998). Only recently has there been any investigation into the effects of translocation on Australian elapid snakes (Butler *et al.* 2005a, b).

An initial investigation of the human dimensions of human-snake conflict examined the practices of licensed snake catchers and 'first-contact organisations' who channel calls from the public to snake catchers in urbanised areas in Victoria (Clemann *et al.* 2004). That study showed that many elapid snakes were relocated every year, and that snake catchers, whilst usually following permit stipulations, apply a suite of subjective criteria when choosing release sites. In the present study, I expand on previous results (Clemann *et al.* 2004), adding data from questionnaire surveys of licensed snake catchers and residents who have used the services of these catchers in South Australia, and also pre-

sent some details from Victorian residents who have used snake catchers.

Permit stipulations

Within Victoria, snake catchers operate under permits issued by the Department of Sustainability and Environment (DSE), allowing them to capture and translocate snakes. These catchers are predominantly private citizens, although a minority are keepers at zoological parks or are employed by local governments, either as full-time animal officers, or on an as-needed basis. Permit stipulations require catchers to release snakes on public land with suitable habitat no more than five kilometres from the point of capture. This distance was perceived by policy-makers to be sufficient to solve human-snake conflict, whilst not moving the snake beyond the probable natural distribution of the species (S Watharow, pers. comm.).

In South Australia a 'Snake Catcher's Permit' is required to capture and translocate snakes. This permit allows catchers to capture and translocate any reptile that is causing anxiety or danger to a member of the public. It directs catchers to translocate any indigenous snakes removed from properties, although captured Eastern Brown Snakes *Pseudonaja textilis* may be kept or traded (Department for Environment and Heritage (DEH) 2004). Translocation distance is a maximum of two kilometres, but snakes are not to be released close to dwellings. Alternatively, snakes may be retained for onward transmission to the South Australian Museum or to the holder of a permit to take protected animals.

Methods

Licensed snake catchers in South Australia and residents who have used the services of snake catchers in South Australia and Victoria were surveyed by mail-out questionnaires, which included postage-paid reply envelopes. Questionnaires were not sent directly to residents. Rather, each snake catcher receiving a questionnaire was asked to forward a specific 'resident' questionnaire to five people who had used their services. Each of the state governments has a register of licensed snake catchers. In Victoria, the 45 licensed snake catchers surveyed by Clemann *et al.* (2004) were asked to forward

residents' questionnaires to former clients (i.e. potentially 225 residents if each catcher forwarded questionnaires to five residents). The South Australian DEH was unwilling to release contact details for licensed snake catchers. Consequently, a DEH staff member forwarded questionnaires to licensed snake catchers, and, as for Victoria, these snake catchers were asked to forward questionnaires to five residents who had used their services. Questionnaires were mailed to 28 licensed snake catchers in South Australia, and therefore potentially to 140 residents.

The snake catcher's questionnaire sought details of: 1. the number of calls received to remove snakes each year; 2. the proportion of call-outs that resulted in the capture of a snake; 3. the seasonal timing of calls; 4. the relative contribution of different species to the total captures; 5. the immediate future of captured snakes (translocation, euthanasia, kept captive by self or others, sold to others or commercial pet trade); 6. the distance that snakes were translocated; 7. the selection and number of release sites; 8. whether catchers offered residents information regarding snakes and snake management; 9. whether catchers advertised their services; and 10. whether the catchers charged a fee for the service.

The resident's questionnaire sought details of: 1. the first organisation called to arrange for a snake removal; 2. the resident's beliefs about the reason for the presence of the snake on their property; 3. whether they expected to find snakes on their property following the initial removal; 4. whether they had found subsequent snakes; 5. whether they were charged a fee; 6. whether they thought the fee was reasonable; and 7. whether they were satisfied with the service provided.

Results

Tables 1 and 2 summarise the questionnaire results from snake catchers and residents respectively. Questionnaires were returned by nine (32%) catchers from South Australia (Table 1). One return was not included in Table 1 because that person had only recently received a licence, had not attended any call-outs, and did not provide answers to any questions. Questionnaires were returned by four

Table 1. Responses of licensed snake catchers from South Australia to questions regarding snake capture and translocation practices.

Usual number of call-outs per year	Percentage of call-outs that result in a capture	Months of highest number of call-outs	Species involved in captures: ^a	Fate of captured snakes	Distance snakes moved (km)?	Always use same release site?	Do you offer information	Do you advertise?	Do you charge a fee (\$AUD)?
Company receives hundreds	'majority'	spring, summer	BS 94% RBB 5% CH 1%	Translocation	Within 2 km	No	Yes verbal and printed	Parent co. advertises in phone book & with bumper sticker	\$50-100
80 (~50% resolved over phone)	65-70%	October November February March, April	EBS 90%, RBB 5% MS 5%	Translocation captive	Within 2 km	No	Yes verbal and printed	No	No
10 last year (new service in the area)	~50%	December January	EBS	Translocation	< 2 km (usually > 1km)	No	Yes verbal and printed	Yes flyers distributed around town	< \$50
15-20, plus 15 false alarms 'lizards or imagination'	50%	Late spring early autumn	YFWS 80%, WBS 20% 2 CS 1 WP and 1 CP (escapes) 1 rubber toy snake	Translocation	2 km	No	Yes verbal and give talks to groups	No, but RSPCA [^] and local businesses refer people to this catcher	No
Only one callout (only recently licensed)	1/1	One in October	BS	Euthanasia	< 3 km	No	Yes verbal	No	No
50-100 (respond to ~50% of these)	<50%	Not answered	EBS ~50% RBB ~50%	Not answered	Within 10 km	Not answered	Yes, verbal	Not answered	Not answered

Table 1. cont'd

Usual number of call-outs per year	Percentage of call-outs that result in a capture	Months of highest number of call-outs	Species involved in captures, ^a	Fate of captured snakes	Distance snakes moved (km)?	Always use same release site?	Do you offer information	Do you advertise?	Do you charge a fee (\$AUD)?
0	Not answered	Spring early summer	BS	Translocation	~3 km	Yes	Yes, verbal	No	Not applicable
20	50%	Summer	MS, YFWS WBS, EBS	Translocation	15 km	No	Yes, verbal	No	No

^aBS = Brown Snake *Pseudonaja* spp., RBB = Red-bellied Black Snake *Pseudechis porphyriacus*, CH = Dwarf Copperhead *Austrelaps labialis*, EBS = Eastern Brown Snake *Pseudonaja textilis*, MS = Mulga Snake *Pseudechis australis*, YFWS = Yellow-faced Whip Snake *Demansia psammophis*, CS = Curl Snake *Suta suta*, WP = Water Python *Liasis fuscus*, CP = Carpet Python *Morelia spilota*, WBS = Western Brown Snake *Pseudonaja mitchelli*

[^]Royal Society for the Prevention of Cruelty to Animals

South Australian and seven Victorian residents (Table 2). It is not known how many catchers cooperated with forwarding questionnaires to residents.

South Australian snake catchers

Five respondent catchers operated in rural cities and towns, whereas two operated in suburban Adelaide; one did not indicate his or her area of operation. One catcher simply removed snakes from his or her own property, and therefore had not received any call-outs (but was present for the removal of one snake from a school and one from a horse-show). Most considered that approximately 50% or more of attended calls resulted in the capture of the snake. Several noted that they did not attend all calls, resolving up to 50% of inquiries over the telephone, or that a considerable proportion of calls were false alarms - 'lizards' or 'imagination'.

South Australian and Victorian residents

Two of the four South Australian respondents lived in rural cities, one lived within a couple of kilometres of the centre of Adelaide, and one did not indicate where they lived. Two South Australian residents were charged a fee by the catcher, and both believed the fees to be reasonable (one noting that 'our family safety is worth more'). One respondent offered to pay the snake catcher, but this payment was refused, and another noted that they were not charged since they had caught the snake, and simply wanted the catcher to relocate it so that no one would kill it.

All responding Victorian residents lived in Melbourne suburbs. Three mentioned weather as a factor contributing to snake activity ('...we always get a snake after a really hot, dry day'), and local disturbance, such as adjacent housing developments, was also mentioned as a reason for the presence of snakes.

All respondents expected to encounter other snakes on their property subsequent to the initial removal; indeed seven had done so. The issue of repeat encounters with snakes elicited both positive and negative responses from residents: 'removing the snake has nothing to do with getting more', and 'I'm hoping that once the houses are built behind us, the snakes won't be

Table 2. Responses of residents from South Australia and Victoria to questions regarding snake management on their property.

State	'First contact' organisation that you called	Why was snake attracted to your property	Do you believe that you will encounter more	Have you observed any since first relocation	Were you charged a fee?	Was it reasonable?	Were you satisfied with service?
			thou encounter more	relocation	Yes (\$10)	Yes	Yes
South Australia	'Snake Away Services', Lameroo	Bird life, mice, eggs	Yes	Yes	Yes (\$10)	Yes	Yes
South Australia	Personal friend, a licensed snake catcher	Pet cat brought it into house	Yes	Yes	No	n/a	Yes
South Australia	Whyalla Fauna and Reptile park	Property close to bushland, with lots of garden beds to provide shelter for snakes	Yes	No	No	n/a	Yes
South Australia	'Snake Away Services', Campbelltown	Bird aviary, pile of old sleepers and tin	Yes	No	Yes (\$65)	Yes	Yes
Victoria	Altona Council	Resident was told it was because of mice	Yes	Yes	No	n/a	Yes
Victoria	Wyndham Council	Possibly looking for water (dry summer), also lots of mice in area	Yes	Yes	No	n/a	Yes
Victoria	Wyndham Council	Property very close to Skeleton Creek	Yes	Yes	No	n/a	Yes
Victoria	'The council'	May have been seeking cool shelter because of very hot weather	Yes	No	No	n/a	Satisfactory - not pleased about being asked to 'keep an eye' on the snake
Victoria	Hobson Bay Council	Neighbouring development forcing snakes to move, rocky pond and/or watering the garden on a hot day might have attracted them	Yes	Yes	No	n/a	Yes
Victoria	Wyndham Council	Swimming pool, house shade, garden rock heap	Yes	Yes	No	n/a	Yes
Victoria	Hume City	Property backs onto creek and has long grass	Yes	No	Yes	Yes, because we have young children'	

so prevalent', versus 'they have every right to be here' and 'I hope the housing development doesn't deprive them of habitat ... (I have found dead snakes that were) probably killed by feral cats which are a far worse problem from an ecological standpoint – at least the snakes are native!'.

Discussion

The response rate of the South Australian snake catchers (32%) is similar to that reported by Clemann *et al.* (2004) for the same questionnaire sent to Victorian catchers (31%), and is typical for mail surveys, which usually generate a response rate of 10-50% (Neuman 2000). However, some snake catchers are wary of interaction with licensing agencies (pers. obs.), and may have been reluctant to respond to the questionnaire, even though it was administered from a research (rather than regulatory) government institute. Similarly, some non-respondents may have been unwilling to detail practices that infringed their permit conditions, although others did report such activities.

The response rate of residents is unknown, since it is not known how many snake catchers forwarded questionnaires. Some catchers may have been selective as to whom they forwarded questionnaires, possibly including only those residents whom they felt would provide a positive appraisal of their services. Since only a third of catchers returned questionnaires, it is likely that many were similarly casual in forwarding questionnaires to residents. A similar response rate from residents who did receive a questionnaire may have contributed to the very poor response rate, and it is likely that the responses from residents represent experiences with only a couple of catchers in each state.

South Australian snake catchers

The main differences between the practices of Victorian snake catchers reported by Clemann *et al.* (2004) and the present study relate to differences in species' abundance and distribution, and differences in permit stipulations. For example, whilst Tiger Snakes *Notechis scutatus* were the most frequently relocated snake in most parts of greater Melbourne (Clemann *et al.* 2004), Brown Snakes *Pseudonaja* spp. were most frequently

relocated in South Australia. Similarly, most Victorian catchers reported moving snakes no further than five kilometres from the point of capture (as per permit stipulations, Clemann *et al.* 2004), whereas most catchers in South Australia move snakes no more than two kilometres, as per their permit requirements.

In other respects the reported practices of South Australian catchers mirrored those of their Victorian counterparts. Snake catchers from both states may be involved in many relocations annually (usually tens per catcher, but sometimes far more). The months and seasons reported as having the highest number of call-outs were spring to autumn (October to April). This is the period of peak activity for reptiles in temperate south-eastern Australia, where most ectothermic vertebrates undergo a period of considerably reduced activity in the colder months. Most catchers in both states use multiple release sites, and chose sites that they believed reduced the chance of further human-snake conflict, as well as suiting the perceived ecological needs of the snake (Clemann *et al.* 2004). Finally, most snake catchers in both states offer information to residents on snake biology and management.

South Australian and Victorian residents

Although sample sizes were very small, there was an apparent difference between South Australian and Victorian residents in terms of first contact organisations. Those in South Australia called specific snake removal companies, a friend who was a licensed snake catcher, or a fauna park, whereas the Victorians contacted their local council, perhaps reflecting differences in available services or differential understanding amongst residents about the availability of these services. In areas where snakes commonly occur on private properties, such as where housing estates adjoin creeks or bushland, contact between residents and catcher is often prompted by 'word-of-mouth' recommendation between neighbours. In this way particular catchers, businesses or local governments become known as an effective point of first contact (S Watharow pers. comm.).

Residents reported three broad beliefs as to why snakes occurred on or were attracted to their property – proximity to bush-

land or other snake habitat (especially when this habitat was being disturbed), availability of potential prey, or availability of shelter. Although some of these reasons may be intuitive, in some cases these opinions are also likely to reflect the advice or observations of the attending catchers (Clemann *et al.* 2004), most of whom offer information on snake habits.

All respondents believed that they would encounter more snakes after the initial removal. Mostly this was due to or reinforced by the fact that they had encountered at least one more snake. Although improved property management might minimise the number of snakes subsequently occurring on some of these properties, the removal of a snake clearly does not provide a lasting solution to unwanted contact between humans and snakes. Relocated snakes are part of a larger local population, and, consequently, it will be necessary for some residents to accept that snakes occur on or near their property, and moving individual snakes several kilometres does not prevent repeat encounters.

Residents from both states were very positive in their appraisal of the service provided by catchers, and some specifically mentioned the value of the information provided by the catchers regarding snake biology and property management. Clearly, snake catchers provide a valuable community service that is highly regarded by residents. However, translocating snakes may be problematic for the snakes, and does not provide a lasting solution to human-snake conflict. Moving snakes over large distances can lead to aberrant behaviour (Butler *et al.* 2005a, b) and elevated mortality rates (e.g. Reinert and Rupert 1999). Additionally, relocated snakes may travel from release sites into neighbouring private properties (Butler *et al.* 2005a). There is a need for greater public education regarding the management of snakes, as well as the evaluation of alternative management practices.

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